

### Abstract of the Invention

Novel pseudopeptide analogs of the insect allatostatin neuropeptide family which possess biological activity mimicking that of the naturally occurring neuropeptides are disclosed. By addition of a hydrophobic moiety to an active portion of the allatostatin peptides, analogs are produced which exhibit an overall amphiphilic nature and which are capable of penetrating the insect cuticle while still retaining biological activity. Furthermore, by substituting sterically hindered amino acids or aromatic acids for any or all of the first, third or fifth amino acid residues of the allatostatin C-terminal pentapeptide, analogs may be produced which are resistant to degradation by insect peptidases while still retaining biological activity. The analogs may be used for insect control by disrupting critical reproductive and/or developmental processes normally regulated by allatostatins in insects.